IN THE SPECIFICATION:

Please amend the specification as follows. No new matter has been added by way of these amendments.

Please replace the paragraph at page 6, lines 2-4 with the following new paragraph:

A1

The word 'H_2S resistant' means that the material ~~is~~ does not form micro-cracks that weaken the material. However, the material may still 'react' with H_2S. Thus, a non-reactive or inert, material is also H_2S –resistant, but the reverse may not be true.

Please replace the paragraph at page 7, lines 11-15 with the following new paragraph:

A2

There were 4 series of tests conducted:

1. Flowline ~~Monel~~MONEL® test
2. Flowline titanium test
3. Elastomer test
4. Displacement unit test

Please replace the paragraph at page 7, lines 21-23 with the following new paragraph:

A3

Figures 4 and 5 are representative of the behavior of the ~~Monel~~MONEL® and Titanium sections of the flowline, respectively. Here we see that, after pumping 50 ppm H_2S through the ~~Monel~~MONEL® tube for 4 hours, only 12 ppm is coming out, while the Titanium is nearly non-reactive.

Please replace the paragraph at page 8, lines 7-10 with the following new paragraph:

A4

The displacement unit differs from the flowline in that the fluid is resident on the same material for roughly 30 seconds. The displacement unit is made from both ~~Monel~~MONEL® and Aluminum-Bronze, and it clear from Figure 8 that the displacement unit extracts 16 ppm of the H_2S within 30 seconds and all 50 ppm of the H_2S from the fluid within an hour.

Please replace the paragraph at page 8, lines 19-24 with the following new paragraph:

A series of flowline, elastomer and displacement unit tests were conducted. The results indicate that both the displacement unit and the ~~Monel~~MONEL® sections of the flowline react significantly with any H_2S in the fluid. Therefore, even after a significant pump-out period, the concentration of H_2S at the location of the sample bottle may not be representative of the level which is entering the probe. An H_2S sensor positioned near the sandface may be required. Thus, the development of a non-reactive bottle may be desirable.

Please replace the paragraph at page 11, lines 27-28 with the following new paragraph:

FIG. 4 is a graphic illustration of the relationship between hydrogen sulfide concentration and time for a ~~Monel~~MONEL® Tube with 50 ppm test gas;

Please replace the paragraph at page 14, lines 13-20 with the following new paragraph:

Figure 11 shows the testing cell 30 of Figure 10 in greater detail. This illustration zooms in on the hydrogen sulfide tape 42 and coupons 38 as they are positioned in the housing 32. The metal coupons 38 of this embodiment comprise ~~Monel~~MONEL® and two types of Cupro-nickel. Coupon dimensions of this particular embodiment are approximately 0.062" thick x 0.5" x 0.8" with a 0.234" diameter hole. Dimensions of the tape are similar; approximately 0.004" thick x 0.5" x 1.0" with a 0.250" hole. Other dimensions, shapes and configurations may be envisioned. The tape 42 and coupons 38 can be inserted/removed from the slots 36 in the housing 32 through the use of needle nose pliers or by other means.

Please replace the paragraph at page 15, lines 13-19 with the following new paragraph:

As shown in greater detail in Figure 13, coupon 78 may comprise a U-shaped slab that when inserted into the slots 76 exposes one portion 82 of the coupon 78 to the formation fluid while another portion 84 is isolated from the formation fluid. A top surface 86 of the coupon 78 can be coated with a non-reactive substance such as ~~Teflon~~ TEFLON® or certain plastics. This surface 86 can provide another area of the coupon 78 that is protected from hydrogen sulfide contact and serve as an unreacted surface for interpretation purposes. The apparatus 70 can comprise material that is non-reactive to hydrogen sulfide.

Please replace the paragraph at page 16, lines 2-14 with the following new paragraph:

"Coupons" as used herein refers to a detector for identifying and/or measuring hydrogen sulfide. For example, a coupon may be a sample of metal that does not react, unless exposed to H_2S. Potential metals may include: ~~Monelalloy~~ Monel® alloy 400 (UNS N04400), 70-30 cupronickel (UNS C71500), 90-10 cupronickel (UNS C70600) as well as others reactive to hydrogen sulfide. It is desirable that the coupon materials that are used cover a range of hydrogen sulfide reactivity, so that a quantitative determination of the hydrogen sulfide content can be made. For example, if one coupon reacts at very low levels of hydrogen sulfide (< 5 ppm), a second coupon reacts between approximately 15 – 25 ppm hydrogen sulfide, and a third coupon reacts between approximately 25 – 100 ppm. With this type of apparatus the presence of hydrogen sulfide can be observed and a quantitative analysis of the hydrogen sulfide content can be obtained based on an optical change of the surface of the coupon. The term "optically reactive" within the present application means a material having an external surface that changes color in the presence of hydrogen sulfide.

Please replace the paragraph at page 16, lines 19-23 with the following new paragraph:

Studies were performed to select metals capable of eliciting a detectable response under wellbore conditions. As shown in Figure 16, several materials were selected for detection of hydrogen sulfide. These materials include: three copper nickel alloys – ~~Monel~~MONEL® alloy 400, 70-20 cupronickel, and 90-10 cupronickel; three iron-chromium alloys – 5Cr, 9Cr and 12Cr steels; 316 stainless steel; Nickel alloy 200, ~~Incoloy~~ INCOLOY® alloy 600 and alloy B (a nickel/molybdenum alloy).

Please replace the paragraph at page 17, lines 16-21 with the following new paragraph:

The tests were performed in two phases. The initial part of Phase I involved exposure of three coupons – ~~Monel~~MONEL® alloy 400, 70-30 cupronickel and 90-10 cupronickel. However, the final three tests also contained Nickel alloy 200 and alloy B. Phase II involved the exposure to the three iron-chromium alloys, 316 stainless steel, ~~Incoloy~~ INCOLOY® alloy 600 and alloy B. Specimen evaluation was performed by visual examination. The presence and coloration of the corrosion product on the various corrosion coupons was determined.

Please replace the paragraph at page 17, line 22 - p. 18, line 4 with the following new paragraph:

The results of the coupon tests conducted in the Phase I and Phase II programs are summarized in Figures 17 and 18 respectively. The first two tests conducted with oil-based mud as the liquid phase were used to examine the influence of oil-based mud on the corrosion of the alloys without the presence of hydrogen sulfide. As indicated in Figure 17, only a slight tarnishing of the surface was observed to occur in the cupronickel alloy coupon over the range of temperatures from 250-400°F for durations of 2-6 hours. This type of attack was characterized as a light darkening of the specimen surfaces. For the ~~Monel~~MONEL® and 70/30 cupronickel, this observation was manifested by a thin, light-gray surface layer. For the 90-10 cupronickel, this was a darkening of the natural light orange color of this alloy. No attack was found on the ~~Monel~~MONEL® alloy 400 coupon in these first two tests. The tarnish film observed in these studies was described as allowing the metallic nature of the coupon to be observed.

Please replace the paragraph at page 18, lines 17-26 with the following new paragraph:

Following the completion of the above-mentioned Phase I tests, three more tests were conducted that included additional alloys with the aim to find materials which would show a color transformation at higher hydrogen sulfide concentrations than observed for the nickel-copper alloys. Tests 16 through 18 examined the behavior of Nickel alloy 200, alloy B and ~~Incoloy~~ INCOLOY® alloy 600 at intermediate hydrogen sulfide levels (*e.g.*, 10-25 ppm). The results in Table 2 indicate that Nickel 200 exhibited a light gray corrosion film at 25 ppm hydrogen sulfide but not at 10 ppm and 18 ppm. By comparison, alloy B showed a transformation from a tarnish film at 10 ppm to a gray corrosion film at 18 ppm that darkened when going to 25 ppm hydrogen sulfide. ~~Incoloy~~ INCOLOY® 600 had a tarnish film in all three tests and did not exhibit a transformation to a corrosion film at up to 25 ppm concentration.

Please replace the paragraph at page 18, line 27 – p. 19, line 8 with the following new paragraph:

Based on the results of the tests in Phase I depicted in Fig. 17, it appears that all three copper-containing alloys (~~Monel~~MONEL® alloy 400, 70/30 cupronickel and 90/10 cupronickel) produced a discernable color change at very low levels of hydrogen sulfide (<5 ppm). Furthermore, it was observed that alloy B produced a noticeable color change between 18 and 25

ppm hydrogen sulfide. Therefore, the next step in this exploratory study was to try to find a material that would indicate the presence of higher levels of hydrogen sulfide in the range of 25-100 ppm. A search for new candidate materials was conducted and a test matrix developed. The list of candidate materials developed included ~~Incoloy~~ INCOLOY® alloy 600, three iron-chromium alloys (5Cr, 9Cr and 12Cr) and 316 stainless steel. Alloy B and Nickel alloy 200 were also included in the program for comparison.

Please replace the paragraph at page 19, lines 19-22 with the following new paragraph:

As observed in Phase I, ~~Incoloy~~ INCOLOY® alloy 600 produced only light tarnish films up to approximately 25 ppm hydrogen sulfide. The Phase II tests showed that the corrosion films changed from gray to black over the range of about 25 to 100 ppm, which was particularly noticeable by visual examination between about 75 to 100 ppm at 250°F and at 50 ppm at 300°F.

Please replace the paragraph at page 19, line 23 – p. 20, line 2 with the following new paragraph:

The initial phase of testing in this program revealed that all of the copper-containing alloys (~~Monel~~MONEL® alloy 400 and the two cupronickels) examined were very sensitive to color change when exposed to hydrogen sulfide at elevated temperatures. The lowest concentration of hydrogen sulfide used for testing (5 ppm) produced clear signs of a gray to dark gray corrosion product on each of these materials. In terms of partial pressure, this condition was 0.005 psia hydrogen sulfide (5 ppm × 1000 psi). It was also assessed that this process was not highly dependent on test temperature. Therefore, any of the three copper-containing materials should be adequate for identifying service conditions with only traces of hydrogen sulfide.

Please replace the paragraph at page 20, lines 3-7 with the following new paragraph:

The Phase I program also identified candidate materials for use in assessing higher levels of hydrogen sulfide in service environments. These included alloy B and ~~Incoloy~~ INCOLOY® alloy 600. The Phase I tests showed that alloy B produced a corrosion product color change to dark gray between about 18-25 ppm. The partial pressure equivalents for these conditions are 0.018 to 0.025 psia hydrogen sulfide.

Please replace the paragraph at page 20, lines 8-11 with the following new paragraph:

The results of the Phase II program, shown in Fig. 18, indicated that ~~Incoloy~~ INCOLOY® alloy 600 produced a corrosion product color change between about 50 ppm and 75 ppm depending on the service temperature in the range of 250-300°F. The partial pressure equivalent of these conditions are 0.050 to 0.1 psia hydrogen sulfide.

Please replace the paragraph at page 21, lines 3 – page 22, line 8 with the following new paragraph:

Figures 20A-E show the change in corrosion films on ~~Monel~~MONEL® with increasing levels of hydrogen sulfide in the environment. Figure 20A shows an exposure to 0 ppm hydrogen sulfide, Figure 20B shows an exposure to 5 ppm hydrogen sulfide, Figure 20C shows an exposure to 10 ppm hydrogen sulfide, Figure 20D shows an exposure to 25 ppm hydrogen sulfide and Figure 20E shows an exposure to 50 ppm hydrogen sulfide. The change in coloration from tarnish to dark gray appears between 5 and 10 ppm hydrogen sulfide.